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DYNAMICS EXPLORER-1 (DE-1)

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LV/Range: Delta 3913/WTR

Launch Date: August 3, 1981

Projected SC Life/DSN Support: 12 years/9 years

Project Responsibility: Goddard Space Flight Center (GSFC)

Source: SIRD June 28, 1983

Sponsor: OSO

A. MISSION DESCRIPTION

The Dynamics Explorer (DE) mission is designed to study the Earth's electromagnetic fields at varying heights up to 4 Earth radii.

B. FLIGHT PROFILE

The DE-1 was launched on a Delta 3913 launch vehicle from the Western Test Range (WTR) and was placed in a 561 x 23279 km orbit with a 90-degree inclination. The orbital period is approximately 439 minutes.

C. COVERAGE

The DSN began to support this GSFC extended mission on February 1, 1985.

1. Coverage Goals

Coverage consists of five passes per day that last for 45 minutes each.

2. Network Support

The support provided by the DSN is indicated in the following table:

<u>System</u>	<u>Goldstone</u>	<u>Canberra</u>	<u>Madrid</u>
	12 14 15 16	42 43 45 46	61 63 66
S-band TLM	P	P	P
S-band CMD	P	P	P
S-band TRK	P	P	P

NOTE: P = Prime

D. FREQUENCY ASSIGNMENTS

Frequencies are allocated according to the following table:

<u>System</u>	<u>Uplink (MHz)</u>	<u>Downlink (MHz)</u>	<u>Polarization</u>
S-band TLM	--	2214.0	Linear
S-band CMD	2038.725	--	TBD
S-band TRK	2038.725	2214.0	TBD

E. SUPPORT PARAMETERS

The support parameters for the Telemetry, Command, and Support Systems are listed below:

(1) Telemetry

Data Streams	2
Format	PCM/PSK/PM + PCM/PM or Analog/PM
Subcarrier Frequency	768 kHz
Bit Rate	1.024 to 131.072 kb/s
Record	Required

(2) Command

Format	PCM/PSK/PM
Bit Rate	1000 b/s
Subcarrier Frequency	16 kHz

(3) Support

Uplink Power	Nominal 2 kW
Antenna Rate	Moderate
Antenna Angle Data	Required
Antenna Autotrack	Not required
Doppler Rates	Modest
Range Format	Tone (500 kHz major tone)
Recording	
. Analog	Required
. Digital	Not required

F. TRACKING SUPPORT RESPONSIBILITY

The allocation of responsibilities for tracking support is listed in the following table:

<u>Mission Phase</u>	<u>Support Responsibility</u>
Delta 3913 Launch	WTR
Earth Orbit	GSTDN until Feb. 1985
	DSN after Feb. 1985

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